

CLAIMS

1. In a method for sterilizing an article in a sterilizing chamber by exposing the article to humidified ozone containing gas in at least a pair of first and second consecutive sterilizing cycles, the improvement comprising, after the first sterilizing cycle and prior to the second sterilizing cycle, removing from the sterilizing chamber any condensed water present.
2. A method according to claim 1, wherein the step of removing condensed water is effected by a step of flushing the chamber with an inert gas.
3. A method according to claim 2, wherein the inert gas is oxygen.
4. A method according to claim 3, wherein the flushing step is repeated at least once.
5. A method according to any one of claims 1 to 4, wherein the temperature in the chamber is stabilized before the start of the second sterilizing cycle.
6. In a method for the sterilization of an article comprising at least two consecutive sterilization cycles, wherein the first of said consecutive cycles comprises the steps of:
 - (a) providing a sterilization chamber;
 - (b) placing the article into the sterilization chamber;
 - (c) sealing the sterilization chamber;
 - (d) maintaining the sterilization chamber operating temperature at about 20-35°C
 - (e) applying a vacuum of a preselected vacuum pressure to the sterilization chamber, the vacuum pressure being adjusted to a level sufficient to lower the boiling point of water to a temperature at least as low as the temperature in the sterilization chamber;
 - (f) humidifying the sterilization chamber by exposing an amount of water to the vacuum pressure in the sterilization chamber for boiling the water, the amount of water being selected so that the water vapour produced is sufficient to achieve a relative humidity of 90-100% in the sterilization chamber;

- (g) supplying ozone-containing gas to the sterilization chamber;
- (h) maintaining the sterilization chamber sealed for a preselected treatment period; and
- (i) releasing the vacuum in the sterilization chamber;

and the second of said at least two consecutive sterilization cycles comprising repeating at least steps (e) to (h) the improvement comprising

effecting an additional step between said first and second cycle wherein the additional step comprises (j) removing any condensed water from the sterilization chamber.

7. A method of claim 6, wherein the sterilization chamber is maintained at an operating temperature of about 30°C.

8. A method of any one of claims 6 or 7, wherein the vacuum pressure is between 0.1 and 10 mbar.

9. A method of claim 8, wherein the vacuum pressure is between 0.5 and 2 mbar.

10. A method of any one of claims 6 to 9, wherein the steps (e) to (g) are repeated a number of times sufficient to ensure complete sterilization of the article and wherein step (j) is repeated after each sterilization cycle except the last cycle.

11. A method according to any one of claims 6 to 10, wherein the step (j) of removing condensed water is effected by a step of flushing the chamber with an inert gas.

12. A method according to claim 11, wherein the inert gas is oxygen.

13. A method according to claim 12, wherein the flushing step is repeated at least once.

14. A method according to any one of claims 6 to 13, wherein the temperature of the chamber is stabilized before the start of said second sterilizing cycle.